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Notice of Allowability	Application No.	Applicant(s)	
	09/665,133	NAKANE ET AL.	
	Examiner	Art Unit	
	Jason M Perilla	2634	

-- Th MAILING DATE of this communication appears on the cover sheet with the corresponding address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed November 1, 2004.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☒ The drawings filed on 19 September 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20050131</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David J. Zoetewey on January 27, 2005.

The application has been amended as follows:

Regarding claim 1,

in line 2, "been ASK-modulated" is replaced by –been amplitude shift keying (ASK) modulated--,

in line 7, "to each bit" is replaced by –to a bit--, and,

in line 8, "a data value in" is replaced by –a data value of the bit in-.

Regarding claim 2,

in line 3, "the ASK-modulated" is replaced by –the ASK modulated-.

The following versions of claims 3, 7, and 8 replace any prior versions of the corresponding claims in the application in their entirety.

3. A contactless IC card comprising:

a demodulator circuit which receives a carrier wave that has been amplitude shift keying (ASK)[[-]]modulated with digital data, and demodulates the ASK[[-]]modulated carrier wave to recover the digital data; and suspending means which suspends the demodulation by the demodulator circuit during periods in which where there is no possibility of a change of a data value in the digital data;

wherein the demodulator circuit includes:

a detector circuit which detects an envelope of the ASK[[-]]modulated carrier wave;

a reference voltage generator circuit which outputs a reference voltage;

a differential circuit which receives the envelope from the detector circuit, and outputs differential components of the received envelope based on the reference voltage; and

a comparator circuit which includes a first input terminal for receiving the output of the differential circuit, a second input terminal for receiving the output of the reference voltage generator circuit, and an output terminal, compares a voltage at the first input terminal and a voltage at the second input terminal, and inverts an output of the output terminal if a difference between the two voltages exceeds a predetermined value; and

wherein the suspending means includes:

~~a short-circuit control circuit which short-circuits the first input terminal and the second input terminal during the periods where there is no possibility of a change of a data value in the digital data; and~~

a short-circuit control signal output circuit which outputs a short-circuit control signal to ~~the short-circuit control circuit, to indicate the~~

~~periods during which there is no possibility of a change of a data value in the digital data~~ a short-circuit control circuit which short-circuits the first input terminal and the second input terminal during the periods in which there is no possibility of a change of a data value in the digital data.

7. A contactless IC card comprising:

a demodulator circuit which receives a carrier wave that has been amplitude shift keying (ASK) modulated with digital data, and demodulates the ASK-modulated carrier wave to recover the digital data; and suspending means which suspends the demodulation by the demodulator circuit during periods in which ~~where~~ there is no possibility of a change of a data value in the digital data;

wherein the demodulator circuit includes:

a detector circuit which detects an envelope of the ASK-modulated carrier wave;

a reference voltage generator circuit which outputs a reference voltage;

a differential circuit which receives the envelope from the detector circuit, and outputs differential components of the received envelope based on the reference voltage; and

a comparator circuit which includes a first input terminal for receiving the output of the differential circuit, a second input terminal for receiving the output of the reference voltage generator circuit, and an output terminal, compares a voltage at the first input terminal and a voltage at the second input terminal, and inverts an output of the output terminal if a difference between the two voltages exceeds a predetermined value; and

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wherein the differential circuit is a capacitor resistor (CR) time constant circuit,
and

wherein the suspending means includes:

~~a time constant increase circuit which sustains a time constant of the CR~~
~~time constant circuit at a higher level during the periods where~~
~~there is no possibility of a change of a data value in the digital data;~~
and

a time constant control signal output circuit which outputs a time constant
control signal to the ~~time constant increase circuit~~, to indicate the
periods during which there is no possibility of a change of a data
value in the digital data a time constant increase circuit which
sustains a time constant of the CR time constant circuit at a higher
level during the periods in which there is no possibility of a change
of a data value in the digital data.

8. The contactless IC card of Claim 7,

wherein the time constant increase circuit includes:

~~a first capacitor which is connected in parallel with a second capacitor included in~~
~~the CR time constant circuit; and~~

a switching element which is connected in series with the a first capacitor, and
receives the time constant control signal from the time-constant control
signal output circuit; and

a second capacitor connected in parallel with the serially connected switching
element and the first capacitor.

Regarding claim 12,

in line 2, "been ASK-modulated" is replaced by –been amplitude shift
keying (ASK) modulated--,

in line 7, "periods where" is replaced by –periods in which--, and,

in line 32, "unit is accessed" is replaced by –unit is only accessed--.

Regarding claim 13,

in line 3, "been ASK-modulated" is replaced by –been amplitude shift
keying (ASK) modulated--,

in line 7, "periods where" is replaced by –periods in which--.

**The following version of claim 15 replaces any prior versions of the claim in the
application in its entirety.**

15. A contactless IC card comprising:

a demodulator circuit which includes a comparator circuit having first and second
input terminals, and which receives a carrier wave that has been
amplitude shift keying (ASK)[[-]]modulated with digital data, and
demodulates the ASK-modulated carrier wave to recover the digital data;
and

a suspension unit which, in response to a short circuit control signal which
indicates periods during which there is no possibility of a change of a data
value in the digital data, short-circuits the first and second input terminals
of the comparator circuit to suspend demodulation by the demodulator
circuit including

a short-circuit control signal output circuit which outputs the short-circuit control signal to indicate the periods during which there is no possibility of a change of a data value in the digital data to a short-circuit control circuit which short-circuits the first input terminal and the second input terminal during the periods where there is no possibility of a change of a data value in the digital data

~~a short-circuit control circuit which short-circuits the first input terminal and the second input terminal during the periods where there is no possibility of a change of a data value in the digital data and a short-circuit control signal output circuit which outputs a short-circuit control signal to the short-circuit control circuit, to indicate the periods during which there is no possibility of a change of a data value in the digital data.~~

Regarding claim 16,

in line 3, "determines the times" is replaced by –determines times--,

in line 7, "after the time" is replaced by –after a time--,

in line 8, "prior to the time" is replaced by –prior to a time--, and,

in line 10, "unit is accessed" is replaced by –unit is only accessed--.

Allowable Subject Matter

2. Claims 1-18 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 1-18 are allowed in view of the prior art of record because the prior art of record does not disclose or obviate the suspension of the demodulation of an amplitude shift keying modulated signal by a contactless integrated circuit card during periods of

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time where there is no possibility of a change of digital data contained in the signal wherein a memory is accessed only during the suspension of the demodulation.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jmp


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January 27, 2005